



## Application for Certification as an Eligible Energy Resource Under the Delaware Renewable Energy Portfolio Standard

1. Name of Facility

Brooks, Kenneth Residence - K Brooks

2. Facility Address

433 Park Ave

New Castle, DE 19720

Is the facility located within the PJM control area?

☒ Yes

☐ No

If No, does the Facility have import capabilities?

☐ Yes

☐ No

3. Name of Owner

Kenneth Brooks

Mailing Address

433 Park Ave

New Castle, DE 19720

Phone 302-229-6611 Fax

Email kenneth.s.brooks@gmail.com

4. Name of Operator

same as owner

Mailing Address

Phone Fax

Email

5. Name of Contact Person

Allyson Browne, SRECTrade, Inc.

Mailing Address

201 California Street, Suite 630

San Francisco, CA 94111

Phone 877-466-4606 Fax 732-453-0065

Email applications@srectrade.com

6. Name of REC/SREC Owner

same as owner

Mailing Address

Phone Fax

Email

7. List all PJM-EIS GATS State Certification Numbers assigned to this facility:

8. Operational Characteristics:

Fuel Types Used (check all that apply):

☐ Gas combustion from the anaerobic digestion of organic material

☐ Geothermal

☐ Ocean, wave or tidal actions, currents, or thermal differences

☐ Qualified Biomass<sup>i</sup>

☐ Qualified Fuel Cells<sup>ii</sup>

☐ Qualified Hydroelectric<sup>iii</sup>

☐ Qualified Methane Gas captured from a landfill gas recovery system<sup>iv</sup>

☒ Solar

☐ Wind

If co-firing, provide the formula on file with PJM Environmental Information Services, Inc. (PJM-EIS) n/a

Rated Capacity (in megawatts) 0.00812 MW ✓

If multiple fuel types are utilized, attach the formula for computing the proportion of output per fuel type by megawatts per hour generated.

Facility **Final Approved Interconnection Date** 4/6/16 ✓

If co-firing with fossil fuels, co-fire start date n/a

If co-firing with fossil fuels, attach the allocation formula on file with PJM.

9. Is the Applicant's facility customer-sited generation<sup>v</sup>?

☒ Yes ☐ No

Is the Applicant's facility a community owned generating facility<sup>vi</sup>?

☐ Yes ☒ No

Can the output from the customer-sited generation be appropriately metered?

☒ Yes ☐ No

I, Allyson Browne (print name) hereby certify under penalty of perjury that

1. I have made reasonable inquiry, and the information contained in this Application is true and correct to the best of my knowledge, information and belief.
2. I am authorized to submit and execute this Application and to bind myself and/or my company to the representations contained herein.
3. I /my company agree(s) to comply with and be subject to the jurisdiction of the Public Service Commission of the State of Delaware for any matters arising out of my submission of this Application or the granting of the Application.
4. In the event that any of the information contained in this Application changes pending the consideration of this Application or after the Application is granted, I/my company will amend the Application to provide the Commission with such changed information.
5. I acknowledge that if any of the representations made in this Application or in any amendment thereto are found to be untrue when made, I/the company may be subject to sanctions, including but not limited to monetary fines and/or the revocation of any Certificate granted as a result of the representations made in this Application.

Signature: Allyson Browne

Date: 04/18/2016

## Required Documentation:

- If the facility is customer-sited generation, attach a copy of the utility's Final Approved Interconnection Agreement
- If the facility is a community-owned energy generating facility, attach a list of contact information (names, address, phone number, fax, and email) of all owners or customers who are sharing the output of the generator.
- One copy of U.S. Department of Energy, Energy Information Administration Form EIA-860, if rated capacity is >1.0 MW

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<sup>i</sup> "Qualified Biomass" means electricity generated from the combustion of biomass that has been cultivated in a sustainable manner as determined by Delaware Department of Natural Resources and Environmental Control (DNREC), and is not combusted to produce energy in a waste to energy facility or in an incinerator.

<sup>ii</sup> "Qualified Fuel Cells" means electricity generated by a fuel cell powered by Renewable Fuels, as that term is defined in Section 1.0 of the Rules and Procedures to Implement the Renewable Energy Portfolio Standard, Delaware Public Service Commission Regulation Docket No. 56.

<sup>iii</sup> "Qualified Hydroelectric" means electricity generated by a hydroelectric facility that has a maximum design capacity of 30 megawatts or less from all generating units combined that meet appropriate environmental standards as determined by DNREC.

<sup>iv</sup> "Qualified Methane Gas" means electricity generated by the combustion of methane gas captured from a landfill gas recovery system; provided, however, that:

1. Increased production of landfill gas from production facilities in operation prior to January 1, 2004 demonstrates a net reduction in total air emissions compared to flaring and leakage;
2. Increased utilization of landfill gas at electric generating facilities in operation prior to January 1, 2004 (i) is used to offset the consumption of coal, oil, or natural gas at those facilities, (ii) does not result in a reduction in the percentage of landfill gas in the facility's average annual fuel mix when calculated using fuel mix measurements for 12 out of any continuous 15 month period during which the electricity is generated, and (iii) causes no net increase in air emissions from the facility; and
3. Facilities installed on or after January 1, 2004 meet or exceed 2004 Federal and State air emission standards, or the Federal and State air emission standards in place on the day the facilities are first put into operation, whichever is higher.

<sup>v</sup> "Customer-sited Generation" means a generating unit that is interconnected on the end use customer's side of the retail electricity meter in such a manner that it displaces all or part of the metered consumption of the end-use customer.

<sup>vi</sup> "Community-owned Energy Generating Facility" means a renewable energy generating facility that has multiple owners or customers who share the output of the generator, which may be located either as a stand-alone facility or behind the meter of a participating owner or customer. The facility shall be interconnected to the distribution system and operated in parallel with an electric distribution company's transmission and distribution facilities.



A PHI Company

## **PART 1**

# **DELAWARE LEVEL 1 INTERCONNECTION APPLICATION & AGREEMENT**

**With Terms and Conditions for Interconnection  
(Lab Certified Inverter-Based Small Generator Facilities Less than or Equal to 10 kW)  
(Application & Conditional Agreement – to be completed prior to installation)**

### **INTERCONNECTION CUSTOMER CONTACT INFORMATION**

Customer Name: Kenneth Brooks  
Mailing Address: 433 Park Ave  
City: New Castle State: Delaware Zip Code: 19720  
Contact Person/Authorized Agent (If other than above): \_\_\_\_\_  
Mailing Address (If other than above): \_\_\_\_\_  
Telephone (Daytime): 302-229-6611 (Evening): \_\_\_\_\_  
Fax Number: \_\_\_\_\_ E-Mail Address (Required): kenneth.s.brooks@gmail.com

### **Alternate Project Contact Information: (if different from Customer-Generator above)**

Alternate Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_  
Fax Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

If an email is provided for your alternate contact, that contact will receive all email communications.

### **FACILITY INFORMATION**

Facility Address: 433 Park Ave  
City: New Castle State: DE Zip Code: 19720  
DPL Account #: 5000 0419 031 Meter #: 3815993 AGM  
Current Annual Energy Consumption (optional): \_\_\_\_\_ kWh  
Check if this Facility (building) is, or is going to be, NEW CONSTRUCTION: ☐  
Estimated Commissioning Date: 03/15/2016  
Energy Source: Solar PV Prime Mover: Photovoltaics

Type of Application: Initial ☒ Addition/Upgrade ☐ <sup>1</sup>

Initial Rating:

DC Generator Total<sup>2</sup> Nameplate Rating: 8.12 (kW),  
AC Inverter Total<sup>3</sup> Rating 7 (kW),  
AC System Design Total Capacity<sup>4</sup>: 7 (kW)        (kVA)

Added Rating (if upgrade):

DC Generator Total Nameplate Rating: 0 (kW),  
AC Inverter Total Rating 0 (kW),  
AC System Design Total Capacity: 0 (kW)        (kVA)

Total Rating (if upgrade):

DC Generator Total Nameplate Rating: 8.12 (kW),  
AC Inverter Total Rating 7 (kW),  
AC System Design Total Capacity: 7 (kW)        (kVA)

Generator (or PV Panel) Manufacturer, Model #<sup>5</sup>: Winaico WSP-290-M6

A copy of Generator nameplate and Manufacturer's Specification Sheet may also be submitted

Number of Generators (or PV Panels): 28

Type of Tracking if PV: Fixed ☒ Single Axis ☐ Double Axis ☐

Array Azimuth if PV: 135 ° Array Tilt if PV: 30 °

Shading Angles if PV at E, 120°, 150°, S, 210°, 240°, W: 250, 270 ° (Separate with commas)

Inverter Manufacturer<sup>6</sup>: Enphase Model Number(s) of Inverter<sup>7</sup>: M250-60-2LL-S2X

Number of Inverters<sup>8</sup>: 28 Inverter Type: Forced Commutated ☒ Line Commutated ☐

Ampere Rating: 1 each Amps<sub>AC</sub>, Number of Phases: ☒ 1 ☐ 3

Nominal Voltage Rating: 240 V<sub>AC</sub>, Nominal DC Voltage: 48 V<sub>DC</sub>,

Power Factor: 95 %, Frequency: 60 Hz, Efficiency: 96.5 (%)

DPL Taggable, Lockable, Accessible Disconnect<sup>9</sup>: ☒ Yes ☐ No,

If Yes, Location: next to meter

One-line Diagram Attached (Required): ☒ Yes ☐ No,

Site Plan Attached (Required): ☒ Yes ☐ No

Do you plan to export power?<sup>10</sup> ☐ Yes ☒ No, If Yes, Estimated Maximum:        kW<sub>AC</sub>

Estimated Gross Annual Energy Production: 10034 kWh

Is the inverter IEEE/UL1741 lab certified? Yes ☒ No ☐

(If yes, attach manufacturer's cut sheet showing listing and label information from the appropriate listing authority, e.g. UL 1741 listing. If no, facility is not eligible for Level 1 Application.)

<sup>1</sup> Initial if first time generator request. Addition/Upgrade if this is an add-on to a previously approved system.

<sup>2</sup> Sum of all generators or PV Panels

<sup>3</sup> Sum of all inverters

<sup>4</sup> This will be your system design capacity based upon your unique system variables.

<sup>5</sup> If more than one type, please list all manufacturers and model numbers.

<sup>6</sup> If more than one manufacture, please list all.

<sup>7</sup> If more than one model number, please list all.

<sup>8</sup> Attach additional sheets as necessary in the event of multiple inverters of various types/sizes

<sup>9</sup> This is strongly recommended by the utility. Best practice is to have an externally accessible, lockable, disconnect with visible open/close connection and to have appropriate signage on the disconnect, such as 'Solar PV AC Disconnect' (preferably red) and on the meter housing 'Caution, Solar Electric System' (preferably yellow). If the disconnect is not in the immediate vicinity of the meter, please include the disconnect location on the meter signage. This enables the utility and first responders to more quickly deal with an emergency situation.

<sup>10</sup> Yes, if your expected maximum output of the inverter (kW AC) is greater than the lowest load you anticipate at your facility during maximum PV output (kW). The difference would be the amount you may export.



**EQUIPMENT INSTALLATION CONTRACTOR**Owner (Customer) Installed: ☐ Yes ☒ NoContractor Name: Eco Solar SolutionsMailing Address: 36 Austins WayCity: ElktonState: MdZip Code: 21921Telephone (Daytime): 302-893-0073

(Evening): \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-Mail Address (Required): chris@eco-solarsolutions.com**ELECTRICAL CONTRACTOR**Electrical Contractor Name: Top Notch Electrical (Steve Adams)Mailing Address: 123 Connely RdCity: Rising SunState: MdZip Code: 21911Telephone (Daytime): 410-441-9782

(Evening): \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-Mail Address: topnotchelectrical@zoominternet.netLicense number: T1-0005682Active License? Yes ☒ No ☐Is small generator facility eligible for Net Metering? Yes ☒ No ☐**INSURANCE DISCLOSURE**

The attached terms and conditions contain provisions related to liability and indemnification, and should be carefully considered by the interconnection customer. The interconnection customer is not required to obtain general liability insurance coverage as a precondition for interconnection approval; however, the interconnection customer is advised to consider obtaining appropriate insurance coverage to cover the interconnection customer's potential liability under this agreement.

**CUSTOMER SIGNATURE**

I hereby certify that: 1) I have read and understand the terms and conditions which are attached hereto by reference and are a part of this Agreement; 2) I hereby agree to comply with the attached terms and conditions; and 3) to the best of my knowledge, all of the information provided in this application request form is complete and true. I consent to permit the PSC and interconnecting utility to exchange information regarding the generating system to which this application applies.

Interconnection Customer Signature:  Date: 12/30/2015Printed Name: Kenneth Brooks Title: Homeowner





A PHI Company

## PART 2

### DELAWARE INTERCONNECTION APPLICATION & AGREEMENT

With Terms and Conditions for Interconnection  
(Lab Certified Inverter-Based Small Generator Facilities Less than or Equal to 10 kW)  
(Final Agreement – must be completed after installation and prior to interconnection)

#### Certificate of Completion<sup>11</sup>

##### INTERCONNECTION CUSTOMER CONTACT INFORMATION

Customer Name: Kenneth Brooks  
Mailing Address: 433 Park Ave  
City: New Castle State: DE Zip Code: 19720  
Telephone (Daytime): 302-229-6611 (Evening): \_\_\_\_\_  
Fax Number: \_\_\_\_\_ E-Mail Address: kenneth.s.brooks@gmail.com

##### FACILITY INFORMATION

Facility Address: 433 Park Ave.  
City: New Castle State: DE Zip Code: 19720  
DPL Account #: 5000 0419 031 Meter #: 3815993AGM  
Energy Source: Solar PV Prime Mover: Photovoltaics  
Inverter Type: Forced Commutated ☒ Line Commutated ☐  
Number of Inverters: 28  
Inverter Manufacturer: Enphase Model Number(s) of Inverter: M250-60-2LL-S2X

##### Rating

DC Generator Total<sup>12</sup> Nameplate Rating: 8.12 (kW),  
AC Inverter Total<sup>13</sup> Rating 7 (kW),  
AC System Design Total Capacity<sup>14</sup>: 7 (kW) \_\_\_\_\_ (kVA)

Generator (or PV Panel) Manufacturer, Model #<sup>15</sup>: Winaico WSP-290-M6

<sup>11</sup> Information entered here on Certificate of Completion (Part 2) must match part 1

<sup>12</sup> Sum of all generators or PV Panels

<sup>13</sup> Sum of all inverters

<sup>14</sup> This will be your system design capacity based upon your unique system variables.

<sup>15</sup> If more than one type, please list all manufactures and model numbers.

**EQUIPMENT INSTALLATION CONTRACTOR**Owner (Customer) Installed: ☐ Yes ☒ NoContractor Name: Eco Solar Solutions (Chris Kerr)Mailing Address: 36 Austins WayCity: ElktonState: MdZip Code: 21921Telephone (Daytime): 302-893-0073

(Evening): \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-Mail Address: chris@eco-solarsolutions.com**FINAL ELECTRIC INSPECTION AND INTERCONNECTION CUSTOMER SIGNATURE**

The Small Generator Facility is complete and has been approved by the local electric inspector having jurisdiction. A signed copy of the electric inspector's form indicating final approval is attached. The Interconnection Customer acknowledges that it shall not operate the Small Generator Facility until receipt of the final acceptance and approval by the EDC as provided below.

Signed: \_\_\_\_\_

  
(Signature of interconnection customer)Date 03/24/2016Printed Name: Kenneth BrooksCheck if copy of signed electric inspection form is attached ☐**ACCEPTANCE AND FINAL APPROVAL FOR INTERCONNECTION (for EDC use only)**

The interconnection agreement is approved and the Small Generator Facility is approved for interconnected operation upon the signing and return of this Certificate of Completion by EDC:

Electric Distribution Company waives Witness Test? (Initial) Yes (DCD) No (\_\_\_\_)

If not waived, date of successful Witness Test: \_\_\_\_\_ Passed: (Initial) (\_\_\_\_)

EDC Signature: Diana C. DeAngelis 2016.04.06 12:43:49 -04'00' Date: 4/6/16Printed Name: Diana C. DeAngelis Title: Regulatory Affairs Lead



**First State Inspection Agency, Inc.**  
**1001 Mattlind Way**  
**Milford, DE 19963**

**1-800-468-7338**  
**302-422-3859**

Adams, Steven  
Top Notch Electrical Services LLC  
123 Connelly Road  
Rising Sun, MD 21911

## CERTIFICATE

Final Inspection Date: 3-23-16  
Application #: 021414  
Owner: Ken Brooks  
Occupancy: 8.12 KVA Solar Array  
Location: 433 Park Ave.  
New Castle, New Castle Co., DE

This certifies that the installation of electrical equipment listed on referenced application has been approved as meeting the requirements of the National Electric Code, utility, municipalities and Agency rules. Any modification, addition or alteration of the electrical system, after the date of final inspection, will require a new application for inspections and certifications.

  
**Chief Electrical Inspector**

F.S. CERT



10. If the Applicant's installation is solar or wind sited in Delaware, is a minimum of 50% of the cost of the renewable energy equipment, inclusive of mounting components, manufactured in Delaware?

☐ Yes\*

☒ No

Eco solar solutions

Company Name of Installer

36 Austins Way

Address

Elkton, Md.

Address

21921

Chris Kerr

Signature of Company Representative

Chris Kerr

Print Name of Co. Representative

\*If Yes, please attach the following documentation:

- A copy of the supplier's invoice showing Delaware manufactured equipment with this facility identified
  - If the supplier's invoice shows only a coded Purchase Order (PO) number, a copy of the company's matching PO that includes the address where the materials were used/installed, must also be supplied
  - If using a master invoice, a record of the draws against the purchased quantity, on the master invoice, must show the address of each use and the quantity of material used

11. If the Applicant's installation is solar or wind sited in Delaware:

a. Was the facility physically constructed or installed with a workforce that consists of at least 75% Delaware residents?

☐ Yes\*

☒ No

b. Does the installing company employ, in total, a minimum of 75% workers who are Delaware residents?

☐ Yes\*

☒ No

Eco Solar Solutions

Company Name of Installer

36 Austins Way

Address

Elkton Md.

Address

21921

Chris Kerr

Signature of Company Representative

Chris Kerr

Print Name of Co. Representative

\*If Yes, please attach supporting documentation (see pages 7-8 for details). Please note, in order to qualify for the Labor/Workforce Bonus, at least one of the options (a. or b.) must be met.

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**Documentation Required for Delaware Labor/Workforce Bonus**

11. If the Applicant's installation is solar or wind sited in Delaware:

- a. Was the facility physically constructed or installed with a workforce that consists of at least 75% Delaware residents?

If you answered yes to "a." above, complete the following as evidence.

The following individuals (list every employee) were employed by

Eco Solar Solutions

Installation Company Name

as direct labor (physical construction and installation) for this facility: (Attach additional sheets if necessary)

Please complete the following information for all individuals listed above:

Name	Home Address (As per Tax Withholding)	Social Security Number (Last 4 digits only)

Total Delaware Resident Employees: 0 Total Number of Employees: 3

% of Delaware Residents (Delaware Residents Divided by Total Employees): 0

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**Documentation Required for Delaware Labor/Workforce Bonus**

11. If the Applicant's installation is solar or wind sited in Delaware:

- b. Does the installing company employ, in total, a minimum of 75% of workers who are Delaware residents?

If you answered yes to "b." above, complete the following as evidence:

Eco Solar Solutions

Installation Company Name

employed the following individuals (list EVERY employee on the payroll during the period from project start date until project completion date). Projects are considered complete upon final interconnection approval to operate. (Attach additional sheets if necessary)

Project Start Date: 1/26/16 Project Complete Date: 4/6/16

Employee Full Name	Home Address (As per Tax Withholding)	Social Security Number (Last 4 digits Only)

Total Delaware Resident Employees: 0 Total Number of Employees: 3

% of Delaware Residents (Delaware Residents Divided by Total Employees): 0